exchange services: while Pacific Bell must continue to provide service to all customers, whether they buy any profitable usage services or not, CLCs will target their efforts at profitable high usage customers of local exchange services. This is exactly the same as the pattern of competition we are observing in long distance services, where IXCs offer substantial discounts, literally send out checks to "win over" or "win back" high usage customers, while the list prices for most customers continue to increase.[5]

With this background on competitive conditions, Section C analyzes the potential competitors in local exchange services. It shows that California is already one of the most competitive telecommunications markets in the world. Many competitors have already established solid footholds in California, which will enable them to expand rapidly into local exchange services as it is opened to full competition by the Commission. IXCs, CAPs, and cable companies are all positioning themselves as full-service telecommunications providers because they recognize the importance of service packages for both meeting customer requirements and providing pricing flexibility. To this end, these major players are making substantial investments in California and are actively participating in the regulatory process for opening local exchange. As shown in Figure 3, these competitors have been growing much faster than Pacific Bell, whose revenues have been nearly flat for the past five years, in spite of the strong growth in telecommunications services revenues. Unless the Commission modifies its proposed rules for local competition, it will exacerbate the situation by tilting the playing field even further in favor of Pacific Bell's fast-growing competitors.

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[5]See Andrews, Edmund L., "No-Holds-Barred Battle For Long-Distance Calls," *The New York Times*, January 21, 1995, p. 1, and "Reply Affidavit of Paul W. MacAvoy In Support of BellSouth Corporation, Nynex Corporation and SBC Communications Inc. Motion to Vacate the Decree," U.S. Dist. Court, D.C., Civil Action No. 82-0192 (HHG), June 30, 1995, pp. 31-36

Figure 3: Revenue Growth for Selected Communications Companies: 1990-1994

Company	Compound Annual Growth Rate
MFS	131%
TCI	14%
MCI	12%
Sprint	8%
AT&T	4%
Pacific Bell	**1%**
Total Telecom Services	6%

Sources: Annual Reports, 10-Qs, NATA Telecommunications Market Review & Forecasts

Section D addresses the implications of the Commission's proposed rules for local exchange competition for Pacific Bell. I demonstrate that several of the rules proposed by the Commission will deny the shareholders of Pacific Bell a reasonable opportunity to compete evenly with CLCs and earn a fair rate of return on the capital they have invested in California. Specifically, I explain the substantial threat of competitive harm to Pacific Bell unless the Commission modifies several of its proposed rules, such as those regarding unbundling, resale of local exchange services and interconnection pricing (i.e., the "bill and keep" provision), and unless intraLATA presubscription and interLATA relief occur at the same time. Moreover, it is imperative that the Commission generally reduce the degree of asymmetric regulations between Pacific Bell and its competitors and that Pacific Bell be allowed to deaverage its prices and have much greater upward and downward pricing flexibility. Unless the Commission does so, it will promote uneconomic competition and bias market outcomes against incumbent LECs.

Section E offers some basic principles for competition policies, explaining why the application of these principles are essential for efficient competition and how Pacific Bell will be

competitively harmed if the Commission's policies are not consistent with these principles. The section also provides some historical lessons from the disastrous results of surface freight transportation regulation, which, by putting railroads at a substantial competitive disadvantage relative to other modes of transportation, literally drove many rail carriers into the ground. After substantial regulatory reforms, and billions of dollars in public funds to bailout bankrupt carriers, the railroad industry has recovered and now competes very effectively with trucks and other modes: a real testimony to the public benefits of public policies that promote efficient competition on a level playing field.

B. Analysis of Competitive Vulnerability of Pacific Bell

This section reviews several important factors that have and will shape industry conditions in telecommunications services: technological innovation; the changing composition and high concentration of demand; and the inherent attractiveness of the California market for telecommunications services.

1. Technological changes in telecommunications services are decreasing entry barriers and increasing the potential for competition among modes of communication

Although significant technological progress has occurred throughout the entire history of the telephone industry, innovation occurred at an incremental, predictable rate. The major effects of technological change from the 1920s through the 1970s were reduced cost and improved quality of voice communications. Substantial productivity gains ensured that the real prices of telephone services fell continuously, enabling the regulatory system to function with little threat of political intervention. Moreover, under the control of AT&T capital budgeting and network technology decisions, the rate of adoption of new technology was "paced" to avoid early obsolescence or capital reserve deficiencies. During this fifty year period, technology and public policy were mutually reinforcing. Technology-induced productivity gains brought down the cost and raised up the quality and affordability of telephone service.

Yet even then, the seeds of radical change were being sown by breakthroughs in communications technologies. These developments have had two major effects. First, they have enabled local exchange carriers (LECs) to continue to realize historic productivity gains approximately 2% greater than that of the U.S. economy, in spite of the loss of output growth to competitors and customers who self-supply telecommunications services (e.g., PBXs and private networks).[6] Second, these technological changes have caused fundamental shifts in industry economics, stimulating entry and increasing actual and potential competition within and across modes of communications. Among the most critical of these "competition enabling" developments were:

- rapid advances in microelectronics enabled development of PBXs comparable to central office (CO) switches in providing intelligent services, vastly increasing competition between telephone companies and equipment vendors;

- the development of microwave transmission enabled entry by MCI (originally "Microwave Communications, Inc.) and competition in long distance services;

- the development of fiber optics has revolutionized the provision of outside plant in high density areas, enabling (1) the entry of competitive access providers; (2) a marked increase in long distance traffic and competition; and (3) cable TV networks to offer interactive services, including basic telephony;

- dramatic improvements in wireless communications systems are expected to generate quantum increases in capacity, substantial improvements in quality and falling prices, enabling wireless carriers to compete with wireline carriers.[7]

As a consequence of these and other fundamental advances in communications and information technologies, innovation is the dynamic force generating changes in market conditions, competition, and public policies. This technological dynamic is increasingly powerful because

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[6] See Prepared Testimony of Dr. Laurits R. Christensen on behalf of Pacific Bell, CPUC I.95-05-047, September 8, 1995. These dramatic technological breakthroughs have enabled the telecommunications industry to outperform the U.S. economy. Because output growth is a critical source of productivity gains, the increased loss of output by Pacific Bell to its competitors may make it difficult to sustain the historic rate of productivity gains.

[7] Cellular Carriers Association of California reports that average nominal prices in the state have fallen 10.5 to 15.5 percent overall in the last five years. ("Cellular Industry Applauds FCC Rejection of CPUC Petition to Regulate Cellular Rates," Cellular Carriers Association of California News Release, May 11, 1995.) Real prices have been falling even faster -- by the amount of inflation. Price reductions are continuing as digital services are being introduced today at lower prices than existing analog services.

innovation is occurring at an accelerating rate, with no sign of abating. Such technological advances are dramatically changing the economics of and competitive conditions within telecommunications services by:

- shifting scale and scope economies within and across modes of communication, enabling video dialtone, cable-telephony, wireless local loops and other forms of "intermodal" competition;
- facilitating entry, by reducing initial capital costs and allowing entrants to offer an array of new services to meet changing and growing customer demands;
- reducing the advantages of the incumbent carrier, due to its substantial investment in an embedded base, a substantial share of which is becoming technologically obsolete.

Given these dramatic changes in telecommunications technology, the economic foundations of local exchange service have been shaken to the core:

> "The telecommunications industry is about to undergo a technology-driven earthquake of enormous magnitude... The financial epicenter of this metamorphosis will be in the... local loop [because] copper twisted pair is a very high cost, low functionality, archaic technology... The new technologies — high capacity fiber circuits to large businesses, wireless (new cellular, SMR, and PCS) systems and telephony and video on fiber/coaxial cable systems — have lower costs and higher functionality than the existing copper twisted pair local loop... New entrants who can deploy the new technologies and gain market share will be very successful."[8]

The Commission must realize that, due to this "technology-driven earthquake," competition will develop at a rapid rate in local exchange services, without policies biased against incumbent LECs such as Pacific Bell. Indeed, given the technological potential for competition, biased rules for local competition will do more to harm competition than to promote it.

2. *Changing composition of demand for telecommunications services provides competitive opportunities for entrants*

The "composition of demand" refers to the changing mix of services demanded by customers.

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[8] Sirlin, Philip J., "The Digital Battlefield: Bellopoly -- The End of the Game," March 22, 1994, p. 5.

Technological change is dramatically reshaping the use and users of telecommunications services, as the industry moves rapidly from predominantly voice applications to data, image and video applications. The number, size and sophistication of communications applications are increasing rapidly, as large and small business users and advanced residential users become more demanding customers. Increasingly, businesses view telecommunications services as a strategic tool for improving customer satisfaction (e.g., 24-hour sales and service), improving operating efficiency (e.g., real-time access to critical business information) and reducing costs (e.g., electronic data interchange for placement of orders and payment).

As the demand for advanced telecommunications applications has grown, most or all large business users — and many small- and medium-sized businesses — have hired and developed specialists in purchasing and managing telecommunications services. More than half of the "Fortune 500" and thousands of medium and smaller enterprises have created a "Chief Information Officer" position, to whom a range of computer, communications and information experts and analysts report.[9]

> "Tech managers depend on communications technology for many of the products they buy and develop. Until recently, a chief information officer's deepest involvement with telecom companies might have involved long-distance rates. Now they may end up debating the relative merits of ISDN, frame relay, and asynchronous transfer mode. Who will provide Internet access? What steps do they need to take to implement EDI with suppliers and customers?" [10]

With intimate knowledge of alternatives, these highly sophisticated communications specialists continually seek out small differences in prices and negotiate with service providers to get the best possible combination of price and service. When regulated prices differ markedly from market realities, buyers will turn to more market responsive alternatives. Even among residential users, there are rapidly growing demands for advanced telecommunications services. With one-third

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[9] Moore, Lisa J. and Marc Silver, "A baker's dozen of jobs for the needs of the '90s," *U.S. News & World Report*, September 25, 1989, Vol. 107, No. 12, p. 62.

[10] Joel Dreyfuss, "Dial-Tone Madness," *InformationWeek*, July 24, 1995, p. 6.

of the U.S. work force engaged in "work at home," and with personal computers in nearly one-third of American homes, many residential customers are no longer satisfied with "plain old telephone service."[11]

While many customers are eager to take advantage of new and advanced telecommunications services, both business and residential customers also want simplicity, efficiency and the highest possible discounts.

> "Customers prefer to deal with fewer providers, and seek the increased discount levels that result from the aggregated size of their account."[12]
>
> "Customers want simplicity. The winners in this battle [competition for telecommunications services] will be those that understand that."[13]
>
> "In short, the [Sprint] venture will give what market research shows that consumers want: A complete selection of integrated services, packaged in a way that is simple to access, seamless in delivery, and superior in quality."[14]

As the character of customer demand and array of available services change, so too do the sources of competitive advantage. Whereas in the past Pacific Bell had an enormous competitive advantage in the ubiquity of their network, provisions for interconnection reduce or eliminate that advantage, while regulatory limitations on Pacific Bell are a growing source of competitive disadvantage. If, for example, AT&T can offer customers a package of local, long distance (intra- and interLATA) and wireless service, that would be a substantial source of competitive advantage over Pacific Bell, so long as it cannot do the same.

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[11] "Teleworkers of the '90s still need office space," *Real Estate Weekly*, January 11, 1995, p. 10.

[12] Yankee Watch, "Convergence of Local and Long Distance: The New Integrated Carriers," December 1994, p. 3.

[13] Quoting AT&T Communications Services Group President Alex Mandl. "AT&T Eagerly Plots a Strategy to Gobble Local Phone Business," *The Wall Street Journal*, August 21, 1995, p. A1. (hereinafter "AT&T Eagerly Plots," *WSJ*)

[14] "Notice of Ex Parte Communication By Sprint," CPUC Docket R.95-04-043/I.95-04-044, June 5, 1995

3. *High concentration of demand for telecommunications services facilitates targeted entry and makes Pacific Bell vulnerable to competitive losses*

The demand for telecommunications services is highly concentrated among customers and classes of services, which has profound implications for the ease of entry and the competitive vulnerability of the incumbent service provider, Pacific Bell. If every customer consumed a like amount, demand would be homogeneous. Then in order for a new entrant to gain ten percent of the incumbent's business, it would have to compete away ten percent of the incumbent's customers. In reality, the distribution of revenues for telecommunications services is highly concentrated: a small percentage of customers, lines and geographic areas accounts for a very large share of the revenues in most service categories because the intensity of network access and usage varies dramatically across customers and space.

Demand for telecommunications services is very highly concentrated in California: nearly 70% of Pacific Bell's access lines are located in the Los Angeles and San Francisco LATAs, 85% of Pacific's business toll revenues are located in just 6% of California's land mass, and 70% of Pacific's residential toll revenues are generated by just 20% of its residential customers.[15] Figure 4 shows graphically just how concentrated Pacific Bell's revenues are. Pacific's top 62 wire centers, or 10% of the state's total, account for 40% of total revenues. The top 20% of wire centers account for 63% of total revenue. In stark contrast, the bottom 50% of wire centers generate less than 7% of revenues.

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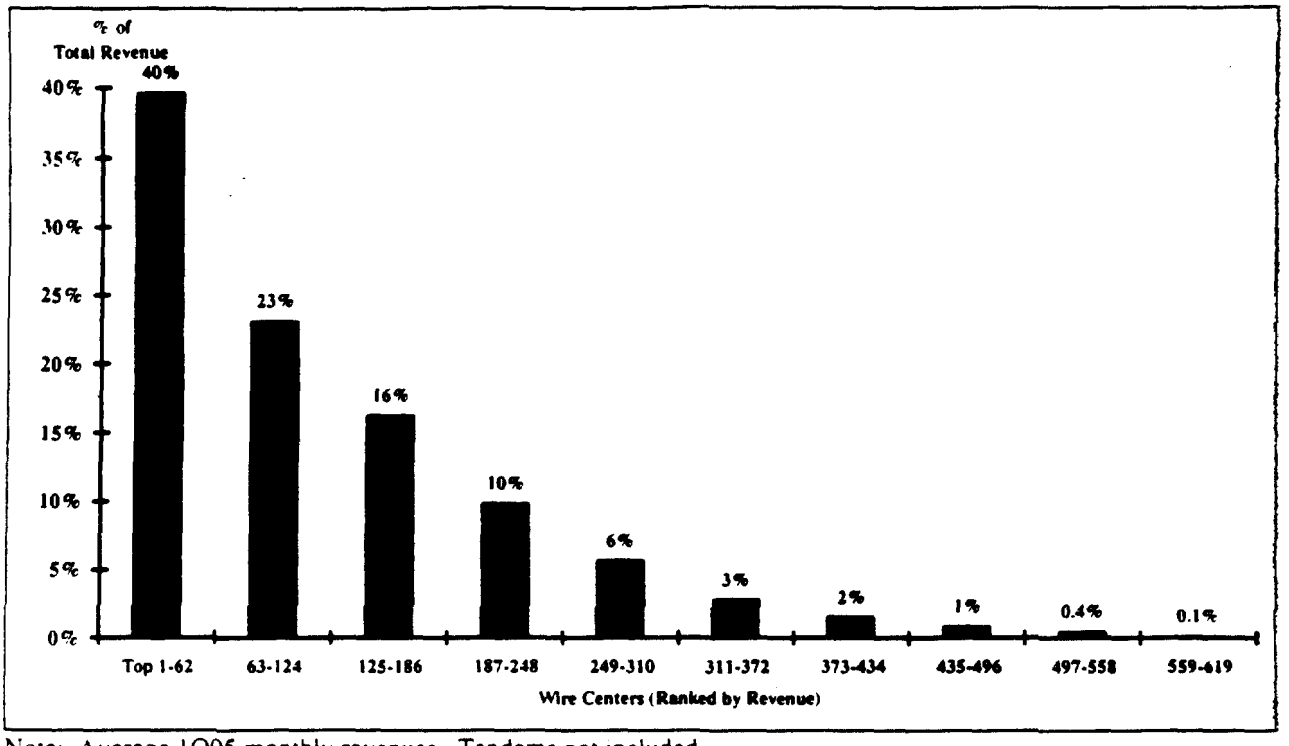
[15] "Pacific Bell Competitive Environment Report," April 1995.

Figure 4: Pacific Bell Revenue Distribution, By Wire Center



Note: Average 1Q95 monthly revenues. Tandems not included.
Source: Pacific Bell wire center data

Because revenues are highly concentrated in network access, exchange services and interexchange services, these markets are easily segmentable and targetable. A rational competitor does not need to serve all geographic or customer segments to compete effectively in one or a few segments. Instead, the rational entrant will target its initial entry at the small share of the customers who account for a large share of revenues. Moreover, because Pacific Bell is not allowed to de-average its prices, customers with very different costs of service pay the same price for service. Hence, profitability is even more highly concentrated than revenues, since the highest volume customers and those in the most densely populated areas are also the lowest cost customers. Whereas Pacific Bell has an obligation to serve all customers, typically at statewide average rates, entrants and competitors can and do target their investments, facilities, operations and sales/marketing efforts at these market segments with the highest expected returns. This greatly facilitates entry because the entrant can reach a very large share of telecommunications market revenues by serving a very small share of customers. Even if the incumbent retains a large share of customers, it is competitively

vulnerable because it can lose a substantial share of the revenues it now receives from these high volume customers.

4. The California market for telecommunications services is especially attractive to competitors

California is a particularly attractive market for competitors. With Gross State Product of over $800 billion, California is not only the largest state economy in the U.S., but is the eighth largest economy in the world. California also ranks first among states in terms of retail, wholesale and manufacturing trade with 12%, 13%, and 10%, respectively, of total U.S. trade.[16] California has the highest volume of telecommunications traffic in the country. One-third of all intraLATA calls and nearly 20% of interLATA calls originate in California.[17] Not surprisingly, Pacific Bell's competitors recognize the importance of California:

> "'Local toll service [in California] promises to be a highly competitive market, and *it's very important to us*,'" says Mike Cuno, an AT&T spokesman.[18] (emphasis added)

> "California alone represents one billion dollars in [intraLATA toll] opportunity or 25% of the business marketplace. . .*MCI really wants to be in California first.*"[19] (emphasis added)

> "...cable TV interests have indicated that they have more than $8 billion to invest in the systems of California affiliates and joint ventures" according to Alan Gardner, Vice President Regulatory and Legal Affairs for the California Cable Television Associations.[20] He added that "there is the potential for providing 70% of Californians with competitive local service sometime in 1997."[21]

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[16] "The UCLA Business Forecast for the Nation and California," UCLA Business Forecasting Project, March 1995, Figure 1 and Table 3; *County and City Data Book 1994*, U.S. Department of Commerce, pp. 12-13.

[17] *FCC Statistics of Common Carriers*, 1993-94 Edition, Table 2.6.

[18] "Local Toll-Call Business Wired for Fierce Competition," *Sacramento Bee*, January 1, 1995, p. E1.

[19] "Insider Liaison Conference Call Report: MCI IntraLATA Competition Report," August 1994, pp. 2, 6.

[20] "California Authorizes Local Competition: Cable TV Firms Plan $8 Billion Investment," *Cable-Telco Report*, July 28, 1995

[21] "Pac. Bell To Seek Compensation," *Dow Jones News*, July 24, 1995.

CAPs also recognize the tremendous potential in California and are actively installing facilities in LEC central offices. Recent filings by LECs to the FCC show that California has more collocation arrangements than any other state. As of June 1995, there were 75 collocation arrangements in California (68 in Pacific Bell territory). The next largest state is New York with 45 arrangements; Massachusetts and Illinois are the only other states with more than 10 arrangements.[22]

5. *The large number of applications for local exchange certification indicates rapid entry of competitors and rapid development of competition*

Not surprisingly, given these changes in technology, composition and concentration of demand and the inherent attractiveness of the California market, over 60 companies including facilities-based IXCs, cable companies, CAPs, cellular companies and resellers of long distance services have applied for authority to provide local exchange services in California. More than half of these 60 have indicated that a portion of their services will be facilities-based. Hence, in the immediate future, we will observe a tremendous increase in competition, as major players enter the local exchange market segment and become full service providers of telecommunications services. In addition, these companies will be providing service spanning the entire state; Figure 5 shows that every LATA in Pacific Bell's territory will be served by multiple alternative providers.

[22] Ex Parte filing - CC Docket No. 91-141 (expanded interconnection), LEC filings, June 1995.

Figure 5: Selected Applicants for Authority to Provide Local Exchange Service in California

Type of Company	Name of Company	Requested Service Areas For Facilities-Based LEX	Requested Service Areas For Resale of LEX
IXCs	AT&T	Statewide	Statewide
	MCI Metro	Areas in LATAs 1,3, 5, 6	Statewide
	Sprint Venture	Areas served by cable co.	Areas served by cable co.
	US Long Distance	Statewide	Statewide
	LCI International		Statewide
	Napa Valley Telecom Svcs		Statewide
	Bittel Telecommunications		Statewide
	AddTel Communications		Statewide
	Fibernet, Inc.		Statewide
	Preferred Long Distance		Statewide
Cable	Viacom	Areas in LATA 1	
	Continental	Areas in LATAs 4, 5, 7	Areas in LATAs 4, 5, 7
	Cable Plus Company	Statewide	Statewide
	Century Telecomm.	Areas served by cable co.	Statewide
CAPs	MFS Intelenet	Statewide	Statewide
	TCG	Areas in LATAs 1, 5, 6	LATAs 1, 5, 6
	ICG Access Services	Statewide	Statewide
	Brooks Fiber	Statewide	Statewide
	GST Pacific Lightwave	Statewide	Statewide
	Linkatel Pacific	Areas in LATA 5	
Cellular	GTE Mobilnet		Statewide
	Cellular 2000	LATAs 4, 8, 9	Statewide
	Bakersfield Cellular	LATA 7	Statewide
	SLO Cellular	LATA 10	Statewide
	Mammoth Cellular	LATAs 4, 5	Statewide
LECs	GTEC	Designated Pacific exchanges	Designated Pacific exchanges
	ELI (Citizens)	Areas in LATA 3	Statewide
	Pacific Bell	Areas in GTEC territory	Areas in GTEC territory

Source: Applications for Certificates of Public Convenience and Necessity to Provide Competitive Local Exchange Service.

C. Analysis of Actual and Potential Competitors in Local Exchange Services

LECs faced very limited competition as little as ten years ago. Today, they face competition from a host of competitors: CAPs, IXCs, cable companies, self suppliers, PBXs, wireless carriers and local service resellers. Small businesses have an increasing array of alternatives to LEC service offerings, and with the delivery of Internet services over cable, and the opening of the local exchange service market early next year, alternatives will rapidly become available to many residential customers. This section provides a profile of significant competitors, explaining their competitive successes to date and demonstrating how they are positioned to quickly become full service providers.

1. Many potential competitors in local exchange services are well established communications companies, not de novo entrants

To understand how the Commission's rules will affect competitive conditions, may promote uneconomic competition, and may competitively disadvantage Pacific Bell, it is essential to understand who the LEC competitors are and/or will likely be. Our perceptions about entry and entrants into telecommunications services are strongly colored by the past. A tiny startup named "Carterphone" was among the first to challenge AT&T's monopoly in customer premises equipment (CPE). Small newcomer MCI challenged AT&T's monopoly in long distances services. Startups like MFS were the first to challenge the monopoly franchise in local access services. The situation in local exchange services in 1995 is completely different. Whereas the initial entrants into CPE, long distance and access services were tiny companies just starting up their businesses, the entrants into local exchange services includes corporate giants with well established competitive positions. In the terms of competitive strategy,[23] entry into CPE, long distance and local access was "*de novo*," entry into local exchange services will be "product line extension." It is substantially easier for firms to

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[23] See Oster, Sharon, *Modern Competitive Analysis*, Oxford University Press, 1990 and Porter, Michael, *Competitive Strategy*, The Free Press, 1980.

enter a related line of business by expanding from their current base than for a startup firm to enter a market. Hence, this section will analyze each of the classes of competitors Pacific Bell will likely face in local exchange services.

2. ***Many strong telecommunications service providers are well positioned to compete for Pacific Bell's core services***

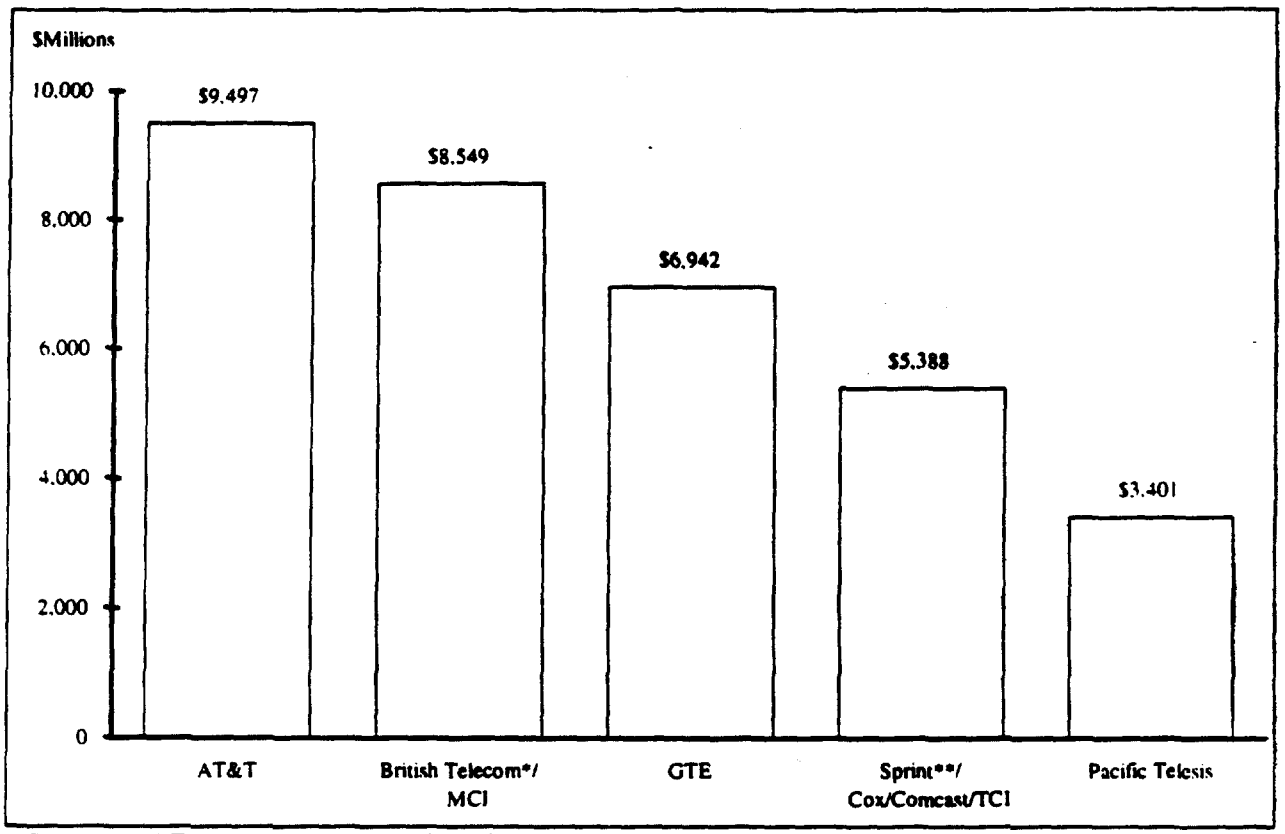
Recognizing customer demand for one-stop shopping and the pricing flexibility inherent in offering packages of services, IXCs, CAPs, cable and cellular companies are positioning themselves to be "full service telecommunications providers." In the last several years, the IXCs have taken advantage of packaging in competing for sales to large businesses. Most notable are AT&T's UniPlan Services, MCI's Vision Service and Sprint's Clarity Service, all of which bundle domestic and international long distance calls, 800 calls, fax transmissions and data transmissions over both switched and dedicated access for volume discounts. In their advertising for these services, all of the companies highlight the benefits of one-stop shopping. CAPs have also been packaging services to business customers, while cable companies have been creating alliances with telecommunications providers and testing technologies for providing telephony over their existing facilities. These and other companies who filed for authorization to provide local exchange service in California will be able to move quickly as full service providers once the market for local exchange is formally opened in January 1996. There are several reasons for this.

First, there has been a fundamental shift in public policy, from "the system is the solution" to widespread support for competition. Many policy makers opposed competition in the earlier era; many now aggressively pursue policies that promote competition in telecommunications. Through the Local Competition, OANAD and Universal Service proceedings, this Commission is actively pursuing such policies. One such policy is resale of local service effective in March 1996. This policy gives CLCs the ability to provide local service to customers throughout the state of California without investing in local exchange facilities, which will enable rapid entry by CLCs into local exchange service and will extend the geographic areas in which CLCs can economically offer this

service.

Second, whereas AT&T was a giant compared to a minuscule MCI in 1975, Pacific Bell faces actual and potential competition from large, established companies such as AT&T, MCI and the Sprint-TCI-Cox-Comcast Venture.[24] As shown in Figure 6, many of the announced entrants into local exchange services in California are much larger than Pacific Bell.

Figure 6: 1994 Operating Cash Flows of Major Telecom Firms



* Figures for BT have been converted from £ to $ using a 1.49 rate and follow UK GAAP conventions.
** Excludes France Telecom and Deutsche Telecom.
Source: Company annual reports.

Even the smaller companies are well positioned to compete with Pacific Bell. Many are well established companies who have in place experienced sales and support personnel, business systems, and, in most cases, some facilities for providing telecommunications services. They also have an

[24] 1994 revenues for AT&T, MCI and Sprint were $75 billion, $13 billion and $13 billion respectively.

established customer base to which they can readily market new services. For example, MFS, whose 1994 revenues were $287 million[25], is already well established as a provider of business telecommunications services.

Third, whereas new entrants in long distance used the same technology as the dominant incumbent AT&T, rapid technological change is shifting the economics of telecommunications, with significant competition just ahead from cable-telephony and wireless providers of access and exchange services. For example, since there is no need for laying cables and no 'hard-wired' connections between the local switch and the subscriber's premises, wireless loops are available today at up to 40% less than the cost of wireline loops. Also, wireless loop systems can be set up in weeks, rather than the months or even years required for wired systems. [26] This technology gives competitive local exchange providers the option of implementing their own loops. In fact, TCG, Electric Lightwave, and MCI Metro have already committed to deploy WinStar Telecommunications' Wireless Fiber offering. [27]

This expansion of technologies has important implications not only for new entrants to telecommunications services but also for large existing players who recognize the value of using multiple technologies. For example, AT&T will use satellites to allow computer users to bypass local telephone networks and connect directly to the Internet.[28] Also, the Sprint Venture will combine the

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[25] MFS 1994 Annual Report

[26] "AT&T Network Systems Introduces Digital Wireless 'Local Loop' System," *PR Newswire*, October 4, 1995. Gifford, Joe, "Wireless Local Loop Applications in the Global Environment," *Telecommunications*, July 1995, p. 35.

[27] O'Shea, Dan, "38 GHz bypass option wins over CAPs," *Telephony*, July 31, 1995, p. 7. Electric Lightwave will use the technology to expand its existing networks in California and other states. Motorola and AT&T also have wireless local loop products. See: Gifford, Joe, "Wireless Local Loop Applications in the Global Environment," *Telecommunications*, July 1995, p. 35; "TeleDensity Promises to be a Wireless Wonder for Telcos," *Telco Business Report*, October 10, 1994; and "AT&T Network Systems Introduces Digital Wireless 'Local Loop' System," *PR Newswire*, October 4, 1995.

[28] Markoff, John, "AT&T Plan Links Internet and Satellites," *The New York Times*, October 4, 1995, p. C1.

nationwide Sprint fiber optic network with local cable networks and PCS networks (as they are developed) to deliver a wide range of telephony and entertainment services to consumers.

Fourth, the creation of the interLATA market as separate from local and toll service was extremely confusing to many consumers who did not understand the reason for divestiture and did not perceive the benefits. Today there is overwhelming evidence that consumers want to return to having just one provider for all of their telecommunications services. With the opening of the local exchange market in California, telecommunications service providers will be able to offer complete packages of communications and information services to end users.[29] Given customers' strong preference for one-stop shopping, there is every reason to believe that the competitive providers will rapidly gain significant share in local exchange services.

3. *IXCs have already gained a substantial share of business intraLATA toll usage*

Since January 1, 1995, when intraLATA toll service was officially opened to competition, IXCs have been aggressively marketing their intraLATA toll services. In the first two months of the year, AT&T, MCI and Sprint increased advertising in California by 32% while nationwide advertising remained flat. As of June 30, AT&T had spent over $55 million in advertising in California including $10 million in advertising directed specifically at toll calling and bypass services. Similarly, MCI had spent over $32 million overall and $8 million in toll and bypass advertising.[30] Toll competition is not limited to the Big Three IXCs. Seventy-two carriers have been authorized for and have filed tariffs

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[29] Pacific Bell is proposing that carriers who resell Pacific's local exchange service not be allowed to bundle services until Pacific can also bundle (i.e. when it offers interLATA services). However, facilities-based carriers who do not purchase local service from Pacific Bell would not be subject to this limitation and could begin packaging all telecommunications services immediately.

[30] *Competitrack*, Volume III, Issue 2, p. 1 and Volume VI, Issue 2, p.1. Note that these numbers are not inclusive of all advertising expenditures in California. Specifically, they cover TV advertising only in San Francisco and Los Angeles and print advertising in only SF, LA, Sacramento, San Diego and Fresno. No radio advertising is included.

for intraLATA toll service.[31] Long distance carriers are promoting intraLATA toll calling by helping businesses automatically reroute their toll calls:

> "Led by AT&T and MCI Communications Corp., major carriers are lavishing discounts, credits and other incentives on users who agree to quit using local exchange carriers (LEC) for toll calls that fall within local access and transport areas. AT&T has appointed 68 intraLATA branch champions — one for each of its sales offices — to push for new intra-LATA toll business. The carrier is offering free autodialers and billing credits to offset the cost of reprogramming private branch exchanges to steer intra-LATA calls away from Bell operating companies... ...The carrier has developed interactive games that help teach its salespeople which calls qualify as intra-LATA toll, a confusing undertaking given it varies in different areas. AT&T is now offering these tools to users, enabling them to teach some employees — such as those who work in offices without a PBX — when to dial the AT&T access code. All these moves are a dramatic expansion of AT&T's earlier move to reprogram its own Definity PBXs for intra-LATA toll dialing (NW, June 13, 1994, page 1). In fact, Goldstein said, 'we've developed expertise in our PBX business to do reprogramming on other vendors' PBXs.'...Sprint Corp. is also offering credits of up to $500 per location toward reprogramming of PBXs."[32]

Pacific Bell began measuring its reduction in intraLATA toll traffic due to 10XXX dialing in January 1995. As of June, 10XXX dialing had resulted in Pacific Bell's loss of an additional 6% of intraLATA toll traffic. It is important to recognize that for business customers this loss of intraLATA traffic is an extension of a longer term trend. While the intraLATA toll market was officially opened to competition on January 1, 1995, IXCs had already captured significant volumes of toll calls through special access products such as AT&T's Megacom, MCI's Prism and Sprint's UltraWATS. A recent study of California business calling patterns indicates that Pacific Bell currently carries only 56% of intraLATA toll minutes. The study also indicates that for businesses, Pacific Bell carries only 14% of combined intraLATA and interLATA toll minutes.[33]

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[31] Letter to California Local Exchange Companies from the CPUC, February 27, 1995.

[32] "Long-Haul Carriers Target Short-Haul Toll Markets," *Network World*, April 24, 1995.

[33] The intraLATA and interLATA toll minutes are based on: switched access calls, calls carried over special access but billed individually by other carriers, 800 calls, and calling card calls. It does not include local measured or ZUM minutes nor does it include traffic carried over customers' private networks or over HiCaps billed on a flat monthly rate. Source: Quality Strategies, Usage Track Report commissioned by Pacific Bell, Second Quarter 1995.

Further evidence of strong competition for intraLATA toll services is seen in the toll prices provided through contracts to large customers. Since intraLATA toll was made a Category II service in January of this year, Pacific Bell has been able to negotiate contracts with its largest customers that provide volume discounts in excess of the tariffed rates. IXCs have been using contracts for the services they offer for years. Pacific Bell files each contract with the CPUC, so price information is publicly available. An analysis of these prices shows that for Pacific Bell contracts signed between December 1994 and February 1995, the average toll price for contracts for greater than one million minutes of use per year was 5.5 cents per minute. Between July to September of this year, the average price was 4.7 cents per minute.[34] This 15% price reduction in just six months demonstrates that the IXCs are competing aggressively for intraLATA traffic of high volume business customers.[35]

Competition from IXCs has also had a dramatic impact on Pacific Bell's share of 800 services. Pacific Bell's share of intraLATA minutes from 800 service has fallen by over half in just the past four years, from 52% to 24%, in spite of Pacific's aggressive 800 pricing and marketing efforts and overall growth in 800 minutes of use in excess of 15% a year. Today, 800 services in California represent almost 9 billion minutes of use, and Pacific Bell has a tiny 6% share.[36] One reason for this loss is Pacific Bell's inability to provide interLATA services. While Pacific Bell can coordinate with IXCs to provide interLATA delivery of 800 service, it is at a significant competitive disadvantage because, unlike IXCs, Pacific Bell cannot package intra- and interLATA services,

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[34] Pacific Bell 96A Usage Contracts filed with the CPUC.

[35] It is worth noting that because IXCs can package both intra- and interLATA calls, there are some very large customers for whom Pacific Bell cannot provide a competitive bid. These tend to be national or international companies that have a high volume of interLATA calls. When the customers' intraLATA traffic is added to their existing interLATA call volumes, these customers earn a higher discount on all of their traffic. In some cases the cost savings resulting from the higher discounts on the existing interLATA traffic exceeds the savings that Pacific Bell can offer on intraLATA calls.

[36] "Pacific Bell Competitive Environment Report", April 1995 and Quality Strategies, Usage Track Report commissioned by Pacific Bell, Second Quarter 1995. Pacific Bell's inability to bundle services also affects its competitiveness in 800 services. As explained above, the IXCs have packaged 800 with long-distance, toll and calling-card offerings, providing customers with discounts across all these services.

cannot offer volume discounts on the combination of intra- and interLATA calls, and cannot provide all 800 calls on one bill.

Largely because it cannot provide interLATA services, Pacific Bell's ability to compete for frame relay services is also greatly constrained. Frame relay is a high speed data communications service used by businesses to transmit high volumes of data among their business locations. The frame relay market is one of the fastest growing telecommunications service markets; it was about $170 million in 1994 and is growing at over 200% per year.[37] Since large businesses with multiple locations are the primary users of frame relay, the ability to offer interLATA service is very important for all frame relay providers. Pacific Bell competes for this business through complementary arrangements with interexchange carriers. While Pacific Bell does have agreements with a few carriers, none of the Big Three IXCs are currently participating. In fact, AT&T, by far the largest provider of frame relay services, has announced that it will not support the industry standard Network-to-Network Interface and therefore will not interconnect with LECs at all.[38] The inability of Pacific Bell and other LECs to offer seamless intra- and interLATA frame relay services is reflected in a market share of less than 7%.[39]

4. AT&T and MCI will be formidable competitors in local exchange services as full service providers[40]

Although AT&T has many strategic alliances with other companies, it is a $75 billion

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[37] "The 1995 Data Comm Market Forecast," *Data Communications*, December 1994, p. 73.

[38] "AT&T won't link to LEC frame relay nets," Network World, August 7, 1995, p. 1.

[39] "The IXC Frame Relay Services Market: This Relay Race Ends at the Bank," *YankeeWatch - Data Communications*. Vol. 10, No. 5, August 1995, p. 3. Yankee Group estimates that market shares to be: AT&T - 32%, Sprint - 23% share, MCI has 18%, LDDS WorldCom - 15%, CompuServe - 5% and All Others (including LECs and CAPs) - 7%.

[40] Sprint will also be a formidable competitor into local exchange services. Because it is pursuing an "intermodal" strategy involving an alliance with cable companies, it will be covered in a separate sub-section below.

company by itself,[41] so it hardly lacks the resources to compete with Pacific Bell, a $9 billion company. While making AT&T a smaller company, the recently announced divestiture is designed to make it a stronger competitor in communications services. "The consensus in the industry is that the breakup of AT&T into three companies gives the once-monolithic business the jump-start it needs to play in a more competitive local telephone service market."[42] By breaking off its computer operations, which were losing money, AT&T will free up cash for investment in local exchange services. Moreover, even after it splits off Network Systems, AT&T will have the knowledge and resources to develop local exchange facilities as it chooses. By establishing cooperative agreements for R&D and product development, the "new" companies could achieve many of the advantages of vertical integration without some of the costs.[43]

AT&T is actively preparing to enter the local exchange market. A recent *Wall Street Journal* report states that AT&T is currently installing "more than 100 switches to route local calls in virtually every Bell market"[44] in preparation for the opening of the local exchange market. The article goes on to say: "People inside AT&T say the company plans a massive first strike against the Bells, hoping to penetrate all 50 states with a special bundle of services."[45]

By acquiring McCaw Cellular, AT&T has already become the largest cellular carrier in the U.S., with 16% of the nation's cellular revenues.[46] AT&T was the second highest bidder in the recently conducted Personal Communications Services (PCS) auctions, paying $1.68 billion for

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[41] AT&T Communications Services currently represents $49 billion of AT&T's total corporate revenues.

[42] Guy, Sandra, "Breakup positions AT&T for local competition," *Telephony*, October 2, 1995, p. 12.

[43] This quasi-vertical integration strategy is employed by the other three largest telecommunication companies in the world: NTT (with NEC, Fujitsu, and Hitachi), Deutche Telecom (with Siemens), France Telecom (with Alcatel). See "Survey of Telecommunications: The Death of Distance", *The Economist*, October 6, 1995, p. 18, for a ranking of world telecommunication companies by revenue.

[44] "AT&T Eagerly Plots," *WSJ*.

[45] "AT&T Eagerly Plots," *WSJ*.

[46] The Wireless Communications Industry, Donaldson Lufkin Jenrette, Summer 1994, p. 11

licenses in 21 markets, more than doubling its potential customer base for wireless services to 200 million people, or 80% of the U.S. population.[47] AT&T's development of the wireless business creates two competitive advantages. First, it will enable AT&T to joint market or package its traditional long distance service with cellular service, offering customers the simplicity of one-stop shopping and attractive pricing across the products. AT&T has already announced plans to joint market its long distance, paging and cellular services in Florida; it is offering free evening and weekend airtime, and customers who use AT&T for both cellular and residential long distance service are eligible for a 25% discount on their cellular long distance calls.[48] Second, as prices for wireless services and equipment continue to decline, AT&T's wireless services will increasingly compete with Pacific Bell's wireline services.

Through the California Telecommunications Coalition, AT&T has been actively pushing for entry into local exchange services, and on September 1, 1995, it filed for authority to provide facilities-based and resale of local exchange services throughout California. In competing for local exchange business, one very important competitive advantage AT&T will have is its brand name. Thanks to a massive national advertising budget for its long distance services, AT&T has one of the best-known brand names in America.[49] The value of the AT&T name was demonstrated recently; when the McCaw paging service was renamed to AT&T, the number of customers inquiring about the service increased tenfold from 600 to 6000 per week.[50] This brand advantage will certainly carry over to local service.

MCI is also positioning itself to compete as a full-service telecommunications provider. Ten

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[47] "Wireless Sales Winners Include AT&T , Sprint...," *The Wall Street Journal*, March 14, 1995, p. A3.

[48] "AT&T Markets Deals on Paging, Long Distance, Cellular Service," *The Miami Herald*, August 1, 1995.

[49] AT&T has been the top advertised brand in the U.S. for the last two years, with the company spending nearly $700 million on advertising in 1994 -- almost 30% more than the ad spending for the second highest brand name and more than double MCI's ad spending. Endicott, R. Craig, "Top 200 mega-brands by 1994 ad spending." *Advertising Age*, May 1, 1995, p. 34.

[50] "AT&T Eagerly Plots," *WSJ*.

years ago, MCI was one-fifth the size of Pacific Bell with revenues in 1984 of $2 billion. Today, MCI is 40% larger than Pacific Bell with 1994 revenues of $13 billion. In addition, MCI has recently had a major infusion of capital through a 20% equity investment by BT (formerly British Telecom), which is itself a $23 billion company, eager to enter the U.S. market through MCI. MCI is aggressively pursuing the local exchange market, as a facilities-based carrier and as a reseller of LEC services, through a wholly owned subsidiary. The subsidiary, named MCI Metro, is a new company being positioned as "a full-service local telephone company."[51] It will spend $2 billion to develop intraexchange capabilities in the top 20 metropolitan areas and intends to serve not only MCI's interexchange customers but those using other IXCs as well. MCI has said that the first wave of its new networks will be built in Los Angeles, New York, Chicago, Atlanta and more than a dozen other big cities; these high traffic areas now account for 40 percent of MCI's long-distance traffic.[52] MCI also has a well-known brand name that will help it compete for local exchange customers.

MCI is also moving into the wireless services by acquiring Nationwide Cellular, the nation's largest cellular reseller. In addition, it recently signed agreements with five cellular companies to resell service. MCI's partners include GTE Mobilnet, BellSouth, AT&T's McCaw, Frontier Corp. and NewPar (a joint venture between AirTouch and Cellular Communications). These deals will give MCI access to 75% of the U.S. population, enabling it to compete with AT&T and other carriers who offer packages including both traditional landline and wireless services. MCI plans to bundle long distance and cellular services: "MCI has already launched cellular services through its Friends and Family program, which offers discounts for calls to designated numbers, with service available in

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[51] "MCI Details Local Plans," *Information Week*, May 2, 1994, p. 18.

[52] "MCI Plans to Enter Local Markets," *The New York Times*, January 5, 1994; and "MCI Rolls Out Plans for Local Network in Major Challenge to RHCs," *Common Carrier Week*, January 10, 1994. In addition, it is noteworthy that reselling LEC loops is an important part of MCI's strategy for providing local service. Gary Parsons, CEO of MCI Metro states: "We believe that MCI Metro could offer a desirable residential product using our switches, billing systems, and feature function capabilities, and the local exchange company's wires or local cable TV company's wires..." *Telco Competition Report*, November 10, 1994, p. 13.

markets currently serviced by Nationwide Cellular."[53]

5. *Competitive access providers are major providers of access services today and are expanding to become full service providers, including local exchange services*

Since 1987, when Bay Area Teleport became the first CAP to offer access service in California, the number of CAPs has grown to eight and the number of communities served has swelled beyond one hundred.[54] CAPs have gained an increasing share of HiCap services in two of California's largest metropolitan areas: Los Angeles and San Francisco. In just two years, between 1993 and 1995, competitor share of HiCap services has more than doubled in San Francisco (to 37%) and increased by a third in Los Angeles (to 39%). Figure 7 shows the extent of Pacific Bell's loss during these years:

Figure 7: Pacific Bell Share of HiCap Services[55]

	1993	1995	Loss
San Francisco	81%	**63%**	18 points
Los Angeles	74%	**61%**	13 points

The maps presented in Figures 8 and 9 illustrate the near ubiquitous presence of CAPs in the high volume business districts of Los Angeles and northern California. In San Francisco today, 84% of the city's business revenues are generated within one block of a CAP network; in Los Angeles, 44% of total business revenues — 23% of California's total — are generated within half a mile of

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[53] "MCI Gains Wireless Access to 75 Percent of U.S. Market," ***The Reuter Business Report***, August 2, 1995.

[54] Huber, Peter W., "The Enduring Myth of the Local Bottleneck in California," July 18, 1994.

[55] "Pacific Bell Second Quarter - 1993 High Capacity Services Market Share, San Francisco and Los Angeles," Quality Strategies, June 25, 1993; and "Pacific Bell Hicap Track Third Quarter, 1995," Quality Strategies, August 8, 1995

CAP facilities.[56] CAPs are now expanding to some of the smaller urban areas in California. For example, CAP networks exist in Sacramento, San Diego, San Jose and Orange County and are being installed in Fresno, Bakersfield and Riverside.

[56] Huber, Peter W., "The Enduring Myth of the Local Bottleneck in California," July 18, 1994.